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Book reviews and notices

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Introduction

Most books that are reviewed for Mycotaxon are written for taxonomists and other interested mycologists. In this instalment, however, we look at a book that is meant to open the eyes of the general public for mushrooms and fungi. The other books reviewed here are more conventional in approach: a book on the terms used in nomenclature, a French mushroom guide, a book on European corticioid fungi, an issue of Phytotaxon dedicated to lichens, and two books dealing with various *Ascomycetes*. Several books are free for download – a very welcome development.

This contribution concludes with a list of newly published books to be included in upcoming Book reviews and notices.

Ascomycetes

Phylogenetic revision of taxonomic concepts in the *Hypocreales* and other *Ascomycota* – a tribute to Gary J. Samuels. Edited by A. Rossman & K. Seifert, 2011. Studies in Mycology no. 68. CBS-KNAW Fungal Biodiversity Centre, PO Box 85167, 3508 AD, Utrecht, The Netherlands. <info@cbs.knaw.nl>. ISBN 978-90-70351-84-7. Pp. ix + 256, illustr. Price: 65 €.

Festschrift-type compilations to honour respected biologists often comprise large numbers of short papers. This number of Studies not only serves to recognize the outstanding contribution Gary Samuels has made to our knowledge of

* Books for consideration for coverage in this column should be mailed to the Book Review Editor at the address above. All unsigned entries are by the Book Review Editor.

tropical hypocrealean fungi in particular during a most distinguished career but includes some substantial revisionary studies that also serve to indicate the current problems and attitudes to the issue of dual nomenclature. As the editors stress in the Preface, there are five different interpretations of 'One Fungus : One name' adopted in the 11 papers that make up this volume: (1) Strict priority of both generic names and species epithets irrespective of whether they are teleomorph- or anamorph-typified; (2) Teleomorph priority with anamorphic species epithets, using teleomorph-typified generic names for species only known as anamorphs; (3) Teleomorph priority with earlier anamorph-typified species epithets not considered, with no attempt to determine if earlier anamorph-typified names exist; (4) Teleotypification of previously anamorph-typified generic and species names so they can be used for the holomorph; and (5) Single species names used, but allowing teleomorph-typified and anamorph-typified names within the same clade. This situation is clearly untenable and needs to be addressed as a matter of urgency through revision of the current provisions of the Code, adopting principles on which a consensus is at last emerging (Hawksworth et al. 2011).

The individual contributions in this issue fall into two main groups: one a series revising generic and species concepts in some of the most economically important groups of *Nectriaceae* and the other on diverse groups of pyrenomycetes, most of which have anamorphs. In the first group are six papers, several of which will surely be viewed as seminal works on generic concepts in the family. These concern red-pigmented species of *Hypomyces/Cladobotryum* (10 of 12 accepted species being described as new); the *Nectria cinnabarina* group with 2-septate ascospores and long-stipitate sporodochia (comprising three species and a species complex); *Neonectria/Cylindrocarpon,* where of the five genera now recognized, three are new (*Ilyonectria* for the *N. radicicola* group, *Rugonectria* for the *N. rugulosa* group, and *Thelonectria* for the *N. mammoidea* group); an overview of *Acremonium*, *Cosmospora, Fusarium, Stilbella,* and *Volutella* where ten genera are recognized (including the resurrected *Atractium, Fusicolla,* and *Microcera,* plus generic status for *Macroconia*); *Cyanonectria* and the new genus *Geejayessia*, with *Fusarium* anamorphs (the separation supported by details of the perithecial wall structures); and — what is perhaps the most controversial paper — a re-assessment of *Acremonium* treating *Acremonium* as monotypic (for *A. alternata*) and then recognizing as distinct the genera *Gliomastix* (five species), *Sarocladium* (eight species), and *Trichothecium* (five species). This means that the most economically and medically important species now find themselves in *Sarocladium*, a result sure to be unpopular, especially as *Acremonium* with *A. strictum* as type species could certainly have been proposed for conservation.

The second group of papers includes a major revision of family circumscriptions in *Glomerellales* (validated here) with dematiaceous ana-

morphs and the now separated *Microascales* with moniliaceous anamorphs. Here *Glomerellales* includes the families *Australiascaceae* fam. nov., *Glomerellaceae,* and *Reticulascaceae* (for *Reticulascus* gen. nov. with *Cylindrotrichum* anamorphs), while *Microascales* comprises *Ceratocystidiaceae* fam. nov., *Gondwanamycetaceae* fam. nov., *Halosphaeriaceae,* and *Microascaceae.* Other contributions concern *Stigmatobotrys* (with epitypifications), the re-appraisal of several genera of *Sordariomycetes*, a revision of *Plagiostoma* (including *Cryptodiaporthe* and the *Diplodina* anamorphs) in which 8 of 11 treated species are newly described, and a study of the *Guignardia* and *Rosenscheldiella* species of pygmy mistletoes in New Zealand (with a new species of each genus).

The whole issue is superbly illustrated and carefully edited and something which I am sure Gary must have been thrilled to receive. All mycologists will wish to join in wishing him a productive and satisfying future – and trust he will never really "retire" while there are so many hypocrealean fungi still to culture and describe!

Hawksworth DL et al. 2011. The Amsterdam declaration on fungal nomenclature. IMA Fungus 2: 105–112.

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***Meliolales* of India. Vol. II.** By V.B. Hosagoudar. 2008. Botanical Survey of India CGO Complex, 3rd MSO Building, Block F (5th & 6th Floor), DF Block, Sector I, Salt Lake City, Kolkata - 700 064, India. Pp. vi + 390, figs 233, pl.12. ISBN 81-8177-026-9. Price: Not indicated.

The first volume of this major work appeared in 1996 (Hosagoudar 1996) but was evidently not submitted to Mycotaxon for review. That volume provided accounts of 378 species, with descriptions and line drawings of all the species. Hosagoudar is based at the Tropical Botanic Garden and Research Institute in Kerala, and has dedicated himself to the study of this very specialized order of ascomycetes. Since the publication of the first volume, his papers continued to flow, and now stand at around 125. A synthesis was therefore becoming increasingly necessary to facilitate access to all this body of work. The second volume deals with an additional 233 species, bringing the total the author accepts in India to an impressive 611. The new volume is printed at a larger format, so sadly may not fit on the same shelf as the first, but the style of the main body of the work is similar in that it mainly comprises descriptions and line drawings of species first reported in publications by Hosagoudar or other authors. What does set this work, apart, however, is the very practical introduction to the collection, preparation, examination, and storage of these

fungi, which are illustrated by step-by-step colour photographs. The different types of mycelia setae, appendages, and ascospores are described, and there is a list of 18 characters that should be noted when describing these fungi (p. 17). Also of note is a small adaptation of the shorthand eight-digit "Beeli formula" widely used in the study of these fungi. The species accounts include details of specimens examined and (in some cases) macroscopic colour photographs of infected leaves. Additional usages of names apart from those where they were introduced are often cited. I do wonder, however, about the value of including author citations after host plant names, as surely these were just copied from other works, and it is mildly irritating that citations are incorrectly given in the names of infraspecific taxa that do not include the type of the species.

The "key" is not dichotomous but is arranged by host family and then host genus, with the modified Beeli formula in the left column, a short description in the central one, and the species name in the third. I always worry when hosts appear to be the primary factor in diagnostic keys. However, when I was involved in a study of some African species of this order, it did prove possible to construct a dichotomous key based on the actual characters of the fungi themselves (Mibey & Hawksworth 1997). What is now needed is for this to be further vindicated by molecular phylogenetic studies. Also ripe for testing by molecular methods is the "imaginary phylogenetic tree" presented here of the ten known meliolaceous genera (p. 32), leading from the fossil *Meliolinites* at the base to *Prataprajella* at the apex.

The work concludes with a 16-page bibliography and separate host and fungus indices. As species covered in the 1996 volume are not included in the key (something that I would have liked to see), it would have been of particular value to cross-reference in the indices both hosts and species treated in the 1996 volume. It will consequently be essential for those wishing to determine these fungi in India to have both volumes on hand.

Whatever emerges from the final analysis of species concepts in these fungi, however, there can be no doubt that the author's painstaking work has revealed a huge and hitherto undocumented diversity of meliolaceous fungi in the subcontinent – something of which he should feel particularly proud. Indeed, I would like to see many more mycologists based in the tropics emulating such in-depth studies of particular fungal groups in their regions.

Hosagoudar VB. 1996. *Meliolales* of India. Calcutta: Botanical Survey of India.

Mibey RK, Hawksworth DL. 1997. *Meliolaceae* and *Asterinaceae* of the Shimba Hills, Kenya. Mycological Papers 174: 1–108.

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Corticioid fungi

***Corticiaceae* s.l. Fungi Europaei 12.** By A. Bernicchia & S.P. Gorjón. 2010. Edizioni Candusso, Via Ottone Primo 90, 17021 Alassio SV, Italy. <maxcandusso@libero.it>. ISBN 978-88-901057-9-1. Pp. 1008, pl. 427, figs 455. Price 77.00 €.

Corticioid fungi are often neglected or scantily covered in mycological inventories and surveys, despite their important roles as decomposers and ectomycorrhizal partners. Identifying these fungi is an art in itself, and this new book in the series Fungi Europaei should make it much easier. All the information on the European species in the *Corticiaceae* s.l., with the exception of *Tomentella*, *Tomentellopsis*, and *Amaurodon*, is united in this one volume. In total 822 species are listed and keyed out, and the 453 Italian species are described and illustrated in full. Not only is all information in one place, the user-friendly keys and clear descriptions and illustrations provide the *Corticiaceae* novice with tools to learn the group and identify with success.

The introduction gives an overview of the existing classifications, including a present-day arrangement of the genera, and a checklist of the European taxa. Keys to the genera are next, in both English and Italian (the rest of the text is in English only), followed by the alphabetical treatment of the genera (with keys to the species). After the descriptions, 188 pages of colour plates, most often two per page, give a macroscopical picture of the species. A glossary, list of references and an index complete the work.

The authors took a pragmatic approach to the genus concept, with the emphasis on morphological characters, resulting in a rather narrow concept for *Hyphodontia* and allies, but a much wider one for *Phlebia*. Excepting the three *Thelephoraceae* genera and the *Sebacinales,* all corticioid species in the *Agaricomycetes* are included and many orders are represented; *Stereum* (*Russulales*), *Mucronella* (*Agaricales*), and *Leucogyrophana* (*Boletales*) are some examples of the diversity. A few new combinations are proposed and one new species is described.

Although our sampling of the keys is limited, we found them to be well constructed and easy to follow, and the descriptions were complete, uniformly formatted, and well illustrated. The quality of the colour photos is variable and although some taxa are not represented by photos, in other cases several photos per taxon are given. Overall the photos are a great addition and no other book we are aware of has such a large number of colour corticoid fungal images.

The book should get a wide distribution, as it is useful far beyond the geographical area for which it is written; the price should not be an impediment. We have used it in California, USA, for about one month, and found it to be very

useful for identifying species from the coast to the high mountain ranges of the Sierra Nevada. It's a shame we don't have a similar book for North America.

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LICHENS

One hundred new species of lichenized fungi: a signature of undiscovered global diversity. By H.Th. Lumbsch and 102 others, 2011. PHYTOTAXA 18: 1-127. <www.mapress.com/phytotaxa/>, ISSN 1179-3155 (print edition) ISSN 1179-3163 (online edition). Price US$ 34.05; free for download.

The primary objective of this work is to demonstrate, at a stroke, that there is an enormous number and diversity of lichen-forming fungi remaining to be described. The 100 species new to science described here come from 37 countries ranging across all continents (including Antarctica). Further, they cover a wide taxonomic spectrum, with no less than 69 genera (all but one ascomycete) from 33 families represented. Also, this is not just a matter of additional minute crustose microscopic species being encountered in the tropics, as even some conspicuous macrolichens from Europe are introduced.

The text for each species includes a terse Latin diagnosis (rarely exceeding two lines), a detailed description in English, notes on distribution and ecology, etymology of the name, details of any additional specimens examined, and a discussion on the differences from other species. Half-tone photographs, mainly of macroscopic features, are provided; these would have been more appealing in colour, but colour-versions are available through the species pages on the ENCYLOPEDIA OF LIFE website (http://www.eol.org/pages/).

This project clearly provided the impetus for many lichenologists to formally describe species that had been sitting in their laboratories, and emphasizes the point that much undescribed biodiversity is already collected and awaiting description. In the introduction to the volume, the importance of collaborative global initiatives in tackling taxonomic problems is seen as crucial in times of economic constraints. The way in which so many authors have been willing to collaborate in this particular venture augers well for future major initiatives in lichen systematics, especially the NSF-funded project on assembling a monograph of *Graphidaceae* initiated last year.

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Mushroom guides

Le guide des champignons France et Europe. By G. Eyssartier & P. Roux, 2011. Éditions Belin, 8, rue Férou, 75278 Paris, France; <www.editions-belin.com>. ISBN 978-2-7011-5428-2. Pp. 1120, pl. 1400. Price: 35 €.

A compact soft-cover book, heavy, full of colour photos and short descriptions of mushrooms commonly encountered in France and other parts of Europe, and a fascinating introduction – that sums this book up.

Written by two well-seasoned, experienced and enthusiastic mycologists, the introduction starts out with the rules for successful collecting if you want to be able to identify your species with ample attention for habitat observations. A short piece on the scientific names and naming of mushrooms (very useful), is followed by more serious topics such as the keys in the book, the characters used in identification: spore colour, smell and taste, the reagents used in the field, with an innovatively illustrated chapter on microscopy. A chapter on the main types of poisoning is of course also provided. But then the real fun part starts: on the odd-numbered pages 3 photos above each other, on the even-numbered pages the descriptions with some comments, and on the left side of the page the spore colours are indicated. That makes the book very easy to flip through on the way to the right group. The species are ordered according to groups, which are not necessarily along phylogenetic lines. For instance the pleurotoid taxa are all treated as one group. To give you an impression of the scope of the book: 123 species of *Russula,* 153 *Cortinarius* species, and 57 *Mycena* taxa are illustrated. The species in *Cortinarius* are organized by the characters in the key, which are both ecological and morphological (the first group contains species associated with alpine *Salix* species, but after that the species with slimy stipe and bitter pileus cuticle are treated.) The bulk of the book is dedicated to the agaricoid members of the *Agaricales*, *Boletales,* and *Russulales*; gastroid taxa, ascomycetes, polypores and resupinate fungi, jelly fungi, and slime molds are represented by a small number of species. The text on the front cover claims that 3000 species are treated, which would be 10% of the total number of fungi known from France. Still there are many fungi represented here for which I would not know of any other source for a colour photo. And, very important for a guidebook, names are generally up to date — for example, *Mycetinis* for the garlic smelling marasmioid taxa and *Bolbitius titubans* for *B. vitellinus.*

The photos, all taken in the field, are good, give the necessary characters, are pleasing to look at, and details are often highlighted as insets.

Again, a book that can be used far beyond the geographic area for which it was intended, it provides excellent reference material for mycologists working in other parts of the world.

The book of fungi. A life-size guide to six hundred species from around the world. By P. Roberts & S. Evans, 2011. The University of Chicago Press, Chicago, USA, London, UK. <www.press.uchicago.edu>. ISBN 978-0-226-72117-0. Pp. 656, many photographs, figures and maps. Price: US$ 55.

A huge, heavy hardcover book with pages that remind us of nouvelle cuisine with carefully arranged text and figures – that is the first impression of this work.

It is not a guide to fungi of a particular area, but rather it is meant to open the reader's eyes to the world of fungi, and mushrooms in particular. The book starts with an introduction on what fungi are, what they do, their roles in nature, and the ways they are classified. A glossary, some reference books, and an overview of the modern fungal classification are given at the back. The main part of the book is for the species treatments: one species per page, with a life size photo of the cut-out mushroom, plus a blow-up or a smaller version, some nice facts about the mushroom, a map indicating the distribution in the world, a very short description, and some other trivia. The species are arranged by group, such as boletes, agarics, etc. The main part is dedicated to the gilled mushrooms, but fair attention is given to the other groups, with even some lichens included. Every species has also received an English name. The Latin names are in general quite up to date.

Most species covered are found in the UK, where the authors are based, but a fair amount is from other parts of the world.

What is not to like about this book? (a) The English names for mushrooms that are not in the accepted British list have been coined by the authors. (b) The photos depict fungi that have been lifted out of their habitat, all characters are not always visible, in many cases the same photo is used for the blow-up and the life size (and in some cases even the drawing is based on the same figure), and the colours of some photos are too yellow-orange. (c) The maps are not detailed and are, in quite a few cases, absolutely wrong. (For instance, *Leucoagaricus rubrotinctus* occurs only in eastern North America and *Macrolepiota procera* is a European species; however, both names have been used for a slew of different taxa when our knowledge was not sufficient to recognize that these were not the same as the original species.) (d) Some names are wrong and some species' placements are inconsistent: *Cystoagaricus trisulphuratus* is, in fact, an *Agaricus* species in the *Agaricaceae* (*Cystoagaricus* belongs in the *Psathyrellaceae*); *Merismodes* is placed among the agarics and *Henningsomyces* with the polypores, crusts, etc.

In its purpose and layout, this book is comparable to M. Kuo & A. Methven's '100 COOL MUSHROOMS' (2010), which is also aimed at introducing the public to the world of fungi. The number of species and the geographical distribution

are, however, much greater in the present tome. The text with the species is very readable and informative, and it certainly deserves to be on the list of books that mycologists give to their interested friends and family.

Nomenclature

Terms used in bionomenclature: The naming of organisms (and plant communities). Compiled by D.L. Hawksworth. 2010. Global Biodiversity Information Facility, Copenhagen, Denmark; <www.gbif.org>. Pp. 215. ISN 87-92020-09-7. PDF version free for download.

This is a very welcome booklet with definitions of terms used in the various realms of taxonomy and nomenclature. Not only are the official terms of the present versions of the nomenclatural codes included, older and unofficial terms are also presented and explained. We find such terms as 'monophyletic', 'class', and 'valid name' besides 'ur-kingdom', 'kleptotype' and the obsolete 'cotype'.

While the bulk of the book is taken up with the definitions, the introduction explains how this book came about, its scope, and gives a list of the separate existing codes covered (BioCode, International Code of Botanical Nomenclature (ICBN), ICN for Cultivated Plants, Phylocode, IC of phytosociological nomenclature, ICN of Bacteria, ICN of viruses, and lastly the International Commission of Zoological Nomenclature). A table presents an overview of the different meanings of the same term in the various codes, and different terms for the same condition.

The list of creative terms for types used by zoologists is impressive; botany and mycology seem dull in comparison. It is good to know that the book is continuously updated, and free for download. The few mistakes and omissions I spotted can so easily be remedied. For instance, I would love to see an entry for 'stirps', a term that baffled me when I started in mycology.

In conclusion I can only say that this is a very timely and informative source of information, useful for all taxonomists, not only for understanding of current terms under the code they are working with, but especially for communication among disciplines.

Book Announcements

Biodiversity of the *Heterobasidiomycetes* and non-gilled *Hymenomycetes* (former *Aphyllophorales*) of Israel. By D. Tura, I.V. Zmitrovich, S.P. Wasser, W.A. Spirin & E. Nevo, 2011. [Biodiversity of *Cyanoprocaryotes, Algae* and *Fungi* of Israel]. A.R. Gantner Verlag, P.O. Box 131, Ruggell, Lichtenstein, <BGC@adon.li>. ISBN 978-3-906166-99-5. Pp 566. Price c. 93 €.

Fruticose *Roccellaceae*—an anatomical-microscopical atlas and guide with a worldwide key and further notes on some crustose *Roccellaceae* or similar lichens. By A. Aptroot & F. Schumm, 2011. <http://www.bod.de/index.php?id=1132&objk_id=481114>, ISBN 978-3-00-033689-8. Pp. 370, pl. 780. Price 90.00 €.

Los hongos de Panamá. Introducción a la identificación de los macroscópicos. By G. Guzmán & M. Piepenbring, 2011. Pp. 386. pl. 798. Price US$ 45.

Revision of Malaysian species of *Boletales* s.l. (*Basidiomycota*) described by E.J.H. Corner (1972, 1974). By E. Horak, 2011. [MALAYSIAN FOREST RECORDS 51]. Forest Research Institute Malaysia, 52109 Kepong, Selangor Darul Ehsan, Malaysia. <FRIM_Publications@frim.gov.my>. Pp. 245, figs. 127. Price not known yet.

***Strophariaceae* s.l.** By M.E. Noordeloos, 2011. FUNGI EUROPAEI 13. Edizioni Candusso, Via Ottone Primo 90, 17021 Alassio SV, Italy. <maxcandusso@libero.it>. ISBN 978-88-905310-0-2. Pp. 648, pl. 377, figs 43. Price 69.00 €.

The yeasts. A taxonomic study, 5th Ed. Edited by C.P. Kurtzman, J.W. Fell & T. Boekhout, 2011. Elsevier, <www.elsevier.com>. ISBN 10: 0-444-52149-6; ISBN 13: 978-0-444-52149-1. Pp. 2354. Available as EBook and printed book. Price around US$ 368.